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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/324,149	06/02/1999	SHIMON WEISS	IB-1402	1126
8076	7590	10/21/2003	EXAMINER	
LAWRENCE BERKELEY NATIONAL LABORATORY ONE CYCLOTRON ROAD, MAIL STOP 90B UNIVERSITY OF CALIFORNIA BERKELEY, CA 94720			QUARTERMAN, KEVIN J	
			ART UNIT	PAPER NUMBER
			2879	

DATE MAILED: 10/21/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/324,149

Applicant(s)

WEISS ET AL.

Examiner

Kevin Quarterman

Art Unit

2879

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 19 June 2003.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All   b) ☐ Some \*   c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

**DETAILED ACTION**

***Response to Amendment***

1. Applicant's Amendment C, filed 19 June 2003, has been entered and overcomes the claim rejections under 35 USC § 112.

***Claim Rejections - 35 USC § 102***

2. Claims 1-6, 12-15, and 17-22 are rejected under 35 U.S.C. 102(b) as being anticipated by Jaskie (US 5442254).
3. Regarding independent claim 1 and claims 14-15, Figures 1-5 of Jaskie show a multicolor display apparatus comprising an array of semiconductor nanocrystals arranged to form a plurality of different colors, wherein the sizes of the nanocrystals determine the colors (col. 6, ln. 41-46), and a pixel addressing system (Fig. 3-5) operatively associated with the nanocrystal array for selectively optically exciting the nanocrystals to produce a luminescent color pattern of pixels.
4. Regarding claim 2, Figures 3-5 of Jaskie show the pixel addressing system including a backlight source.
5. Regarding claims 3, 6, 13, and 20, Jaskie discloses that the backlight source is a source of ultraviolet light or blue light (col. 7, ln. 48).
6. Regarding claim 4, Figures 4-5 of Jaskie show a pixel addressing system comprising a multi-element backlight source, wherein each source is independently operable.
7. Regarding claims 5 and 12, Jaskie discloses that the source elements may include lasers (col. 3, ln. 62).

8. Regarding claims 17-19, Figure 2 of Jaskie shows nanocrystals on a transparent plate (22).

9. Regarding claims 21-22, the Examiner notes the functional recitation that the pixel addressing system produces light of substantially a single wavelength has not been given patentable weight because it is narrative in form. Since there are no structural differences from the prior art, the light source of Jaskie meets the claim because it is capable of producing light of a single wavelength.

***Claim Rejections - 35 USC § 103***

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 7-11 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jaskie (US 5442254) in view Yagyu (US 5856814).

12. Regarding claims 7-11, Jaskie discloses the limitations of claims 1-6, as discussed earlier. Figure 3 of Jaskie also shows an analyzer and a polarizer (61, 63) in the device. Jaskie fails to exemplify a liquid crystal modulator positioned between the backlight source and the nanocrystal array; an analyzer positioned between the backlight source and the liquid crystal modulator; and a polarizer positioned between the backlight source and the liquid crystal modulator.

13. Yagyu teaches that it is known in the art to provide a liquid crystal modulator in display devices (col. 7, ln. 7-15). Yagyu also teaches that it is known in the art to

provide an analyzer in display devices (col. 13, ln. 44-45). Yagyu also teaches that it is known in the art to provide a polarizer in display devices (col. 13, ln. 44-45). Figure 18 of Yagyu shows the analyzer (522) and the polarizer (522) positioned between the liquid crystal modulator (517) and the backlight source (519).

14. Therefore, it would have been obvious to a person having ordinary skill in the art to provide device of Jaskie with the structure having a modulator, an analyzer, and a polarizer, as taught by Yagyu, for modulating, analyzing, and polarizing the light signals of the light source.

15. Regarding claim 23, the Examiner notes the functional recitation that the pixel addressing system produces light of substantially a single wavelength has not been given patentable weight because it is narrative in form. Since there are no structural differences from the prior art, the light source of Jaskie meets the claim because it is capable of producing light of a single wavelength.

16. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Jaskie (US 5442254) in view of Bhargava (US 5422489).

17. Jaskie discloses all of the limitations of claim 1 as stated above but fails to exemplify a filter placed over the nanocrystal array.

18. Bhargava, in the analogous art of light emitting devices, discloses a glowing device having a nanocrystal layer with a filter for transforming radiation into the desired spectrum region (Column 1, Last Paragraph).

19. Therefore, it would have been obvious to a person having ordinary skill in the art to place a filter over the nanocrystal array, as taught by Bhargava, in the device of Jaskie for filtering light to thereby produce a desired display.

### ***Response to Arguments***

20. Applicant's arguments filed 19 June 2003 have been fully considered but they are not persuasive.

21. In response to applicant's argument that the claimed nanocrystals are implicitly undoped, since there is no mentioning of doping throughout the written description, the Examiner respectfully disagrees. The mere act of not mentioning any doping of the nanocrystals does not necessarily lead one to conclude that the nanocrystals *must* be undoped.

22. In response to applicant's argument that the applied reference of Jaskie does not show a multicolor display apparatus, the Examiner notes that Jaskie provides several examples of how *multiple* colors are produced by adjusting the size distribution of the nanocrystals (See Jaskie; col. 6, ln. 39-61).

23. In response to applicant's argument that the applied reference to Jaskie does not show a pixel addressing system for selectively producing a luminescent color pattern of pixels, the Examiner notes that in Figure 5, for example, Jaskie exemplifies a pixel addressing system (FED array) that produces a luminescent color pattern of pixels.

24. Thus, the Examiner holds that Jaskie explicitly or inherently teaches each limitation of independent claim 1, as discussed earlier.

***Conclusion***

25. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

26. A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

**Contact Information**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Quarterman whose telephone number is (703) 308-6546. The examiner can normally be reached on M-F (8-4:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel can be reached on (703) 305-4794. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7382 for regular communications and (703) 308-7382 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Kevin Quarterman  
Examiner  
Art Unit 2879

kq   
October 20, 2003



**Nimesh Patel**  
**Supervisory Patent Examiner**  
**Art Unit 2879**